Effects of Air Pressure Changes on Gamma Linear Attenuation Coefficient in The Air

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Abstract. The measurements of gamma linear attenuation coefficient in the air at variance air pressure has been done. The measurements were performed to determine the effects of air pressure changes on gamma linear attenuation coefficient in the air. The measurements were used Co-60 as the gamma radiation source and LND 72 Geiger-Muller as the radiation detector in a room with 18oC room temperature and 68% air humidity. The linear attenuation coefficient value was calculated according to Lambert-Beer law. From the measurement, we obtained the attenuated gamma intensity in the air at air pressure variation. The unattenuated gamma intensity was determined by making a linear fit function of the attenuated gamma intensity data. From the calculation, It was found that the value of gamma linear attenuation coefficient in the air increases with the increasing of air pressure.

Keywords: Gamma ray; air pressure; linear attenuation coefficient.

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